has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life and the Basin Plan site-specific objective.

(c) **WQBEL's.** The receiving water contains assimilative capacity for copper; therefore, as discussed in section IV.C.2.c, an acute aquatic life dilution credit of 9:1 and a chronic aquatic life dilution credit of 14:1 were allowed in the development of WQBEL's for copper. Based on the allowable dilution credits, this Order contains an AMEL of 29 µg/L and an MDEL of 54 µg/L based on the CTR criteria for the protection of freshwater aquatic life and the Basin Plan site-specific objective.

(d) **Plant Performance and Attainability** Analysis of the effluent data shows that the MEC of 20.6 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iv. **Dichlorobromomethane**

(a) **WQO.** The CTR includes a criterion of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters from which both water and organisms are consumed. Order R5-2012-0085 included effluent limitations for dichlorobromomethane based on the CTR human health criterion.

(b) **RPA Results.** The MEC for dichlorobromomethane was 4.56 µg/L based on 20 samples collected during the discharge season from September 2014 through June 2017. Dichlorobromomethane was not detected in the upstream receiving water based on four samples collected during the discharge season from September 2014 through June 2017. Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) **WQBEL's.** The receiving water contains assimilative capacity for dichlorobromomethane, therefore, as discussed in section IV.C.2.c, a human health dilution credit of 90.5:1 was allowed in the development of WQBEL's for dichlorobromomethane based on Facility performance. Therefore, this Order contains an AMEL of 25 µg/L and MDEL of 72 µg/L based on Facility performance and the CTR criterion for the protection of human health.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 4.56 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

v. **Pathogens**

(a) **WQO.** In a letter to the Central Valley Water Board dated 8 April 1999, DDW indicated it would consider wastewater discharged to water bodies with identified beneficial uses of irrigation or contact recreation and where the wastewater receives dilution of more than 20:1 to be adequately disinfected if the effluent coliform concentration does not exceed 23 MPN/100 mL as a 7-day median and if the effluent coliform

concentration does not exceed 240 MPN/100 mL more than once in any 30-day period.

DDW has developed reclamation criteria, CCR, division 4, chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as *"…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities."* Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DDW's reclamation criteria from 1 May to 14 June and from 16 September through 15 November because the receiving water is used for irrigation of agricultural land and for contact recreation purposes during certain periods throughout the year. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) **RPA Results.** Municipal and domestic supply, agricultural irrigation, and body contact water recreation are beneficial uses of the Sacramento River. Based on a review of data submitted by the Discharger and the period of record for the United States Geological Survey monitoring stations on the Sacramento River, the last time less than 20:1 (river flow to design effluent flow) dilution was available was more than 15 years ago. Therefore, the DDW requirements are applicable to the discharge.

(c) **WQBEL's.** Pursuant to guidance from DDW, this Order includes effluent limitations for total coliform organisms of 23 MPN/100 mL as a 7-day median and 240 MPN/100 mL, not to be exceeded more than once in a 30-day period. In addition, from 1 May through 14 June and 16 September through 15 November, this Order requires effluent limitations for total coliform organisms of 2.2 MPN/100 mL as a 7-day median, 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum, in order to protect the beneficial uses of non-restricted contact recreation and irrigation in the Sacramento River during these parts of the year. These coliform limits are imposed to protect the beneficial uses of the receiving water, including public health through contact recreation and drinking water pathways.

This Order contains effluent limitations for BOD_5, total coliform organisms, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The

Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBEL's for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMEL's and AWEL's for BOD_5 and TSS of 10 mg/L and 15 mg/L, respectively, which are technically based on the capability of a tertiary system.

(d) **Plant Performance and Attainability.** Analysis of effluent data collected during the discharge season indicates the Discharger can immediately comply with the applicable WQBEL's.

vi. **pH**

(a) **WQO.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the *"...pH shall not be depressed below 6.5 nor raised above 8.5."*

(b) **RPA Results.** Raw domestic wastewater inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH, which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBEL's are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA's TSD also

recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Based on 812 samples taken during the discharge season from September 2014 through June 2017, the maximum pH reported was 7.84 and the minimum was 6.51. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of municipal sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBEL's for pH are required in this Order.

(c) **WQBEL's.** An effluent limitation for pH of 6.5 as an instantaneous minimum is included in this Order based on the protection of the Basin Plan objective for pH. Order R5-2012-0085 included a more stringent instantaneous maximum pH limitation of 8.0, as requested by the Discharger. Effluent data collected over the term of Order R5-2012-0085 indicates that effluent pH was consistently below 8.0. Therefore, this Order retains the instantaneous maximum effluent pH limitation of 8.0 from Order R5-2012-0085.

(d) **Plant Performance and Attainability.** Effluent pH ranged from 6.51 to 7.84. Therefore, the Central Valley Water Board concludes that immediate compliance with the effluent limitations is feasible.

vii. **Zinc**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA translators were used for the effluent and receiving water. As described in section IV.C.2.e of this Fact Sheet, the applicable acute and chronic criteria for zinc in the effluent are 60 µg/L, as total recoverable.

The Basin Plan includes a site-specific, hardness-dependent, maximum concentration water quality objective for the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. Using U.S. EPA conversion factors and the selected ambient hardness described in section IV.C.2.e of this Fact Sheet, the applicable Basin Plan maximum concentration objective for zinc in the effluent is 18 µg/L, as total recoverable.

Footnote 4, page 3 of the Introduction of the SIP states, "*If a water quality objective and a CTR criterion are in effect for the same priority pollutant, the more stringent of the two applies.*" The Basin Plan objective cannot be directly compared to the CTR criteria to determine the most stringent

objective because they have different averaging periods and the CTR criteria vary with hardness. In this situation, the RPA has been conducted considering both the CTR criteria and the Basin Plan site-specific objective. Order R5-2012-0085 included effluent limitations for zinc based on the CTR criteria and the Basin Plan maximum concentration objective.

(b) **RPA Results.** The MEC for zinc in the effluent was 69.8 µg/L (as total recoverable) based on 18 samples collected during the discharge season from September 2014 through June 2017. The maximum observed upstream receiving water concentration was 1.2 µg/L (as total recoverable) based on six samples collected during the discharge season from September 2014 through June 2017. Therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life and the Basin Plan site-specific objective.

(c) **WQBEL's.** The receiving water contains assimilative capacity for zinc; therefore, as discussed in section IV.C.2.c, an acute aquatic life dilution credit of 7.4:1 and a chronic aquatic life dilution credit of 0.57:1 were allowed in the development of WQBEL's for zinc. Based on the allowable dilution credits, this Order contains an AMEL of 81 µg/L and an MDEL of 140 µg/L based on the CTR criteria for the protection of freshwater aquatic life and the Basin Plan site-specific objective.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 69.8 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBEL's for ammonia, BOD_5, chlorine residual, copper, dichlorobromomethane, pH, total coliform organisms, TSS, and zinc. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

b. **Effluent Concentration Allowance (ECA).** For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from section 1.4 of the SIP:

$$ECA = C + D(C - B) \quad \text{where } C>B, \text{ and}$$
$$ECA = C \quad \text{where } C \leq B$$

where:

ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum, with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples.

TENTATIVE ORDER

c. **Primary and Secondary MCL's.** For non-priority pollutants with Primary MCL's to protect human health (e.g., nitrate plus nitrite), the AMEL is set equal to the Primary MCL and the AWEL is calculated using an AWEL/AMEL multiplier, where the AWEL multiplier is based on a 98th percentile occurrence probability and the AMEL multiplier is from Table 2 of the SIP.

For non-priority pollutants with Secondary MCL's that protect public welfare (e.g., taste, odor, and staining), WQBEL's were calculated by setting the LTA equal to the Secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated using the MDEL multiplier from Table 2 of the SIP.

d. **Aquatic Toxicity Criteria.** For priority pollutants with acute and chronic aquatic toxicity criteria, the WQBEL's are calculated in accordance with section 1.4 of the SIP. The ECA's are converted to equivalent LTA's (i.e., LTA_{acute} and $LTA_{chronic}$) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers. For non-priority pollutants, WQBEL's are calculated using similar procedures, except that an AWEL is determined utilizing multipliers based on a 98th percentile occurrence probability.

e. **Human Health Criteria.** For priority pollutants with human health criteria, the WQBEL's are calculated in accordance with section 1.4 of the SIP. The AMEL is set equal to the ECA and the MDEL is calculated using the MDEL/AMEL multiplier from Table 2 of the SIP. For non-priority pollutants with human health criteria, WQBEL's are calculated using similar procedures, except that an AWEL is established using the MDEL/AMEL multiplier from Table 2 of the SIP.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where:

$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting acute ECA to LTA_{acute}
M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

Table F-16. Summary of Water Quality-Based Effluent Limitations

TENTATIVE ORDER

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--
pH	standard units	--	--	--	6.5	8.0
Total Suspended Solids	mg/L	10	15	--	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	29	--	54	--	--
Dichlorobromomethane	µg/L	25	--	72	--	--
Zinc, Total Recoverable	µg/L	81	--	140	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	22	45	--	--	--
	lbs/day[1]	55	110	--	--	--
Chlorine, Total Residual	mg/L	--	0.011[2]	0.019[3]	--	--
Total Coliform Organisms	MPN/100 mL[4]	--	23[5]	240[6]	--	--
Total Coliform Organisms	MPN/100 mL[7]	--	2.2[5]	23[6]	--	240

1 Based on an average dry weather flow of 0.30 MGD.
2 Applied as a 4-day average effluent limitation.
3 Applied as a 1-hour average effluent limitation.
4 Applicable for discharges from 16 November through 30 April.
5 Applied as a 7-day median effluent limitation.
6 Not to be exceeded more than once in any 30-day period.
7 Applicable for discharges from 1 May through 14 June and 16 September through 15 November.

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct WET testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (MRP) (Attachment E, section V). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) The Basin Plan also states that, "*…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*"

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute WET is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State*

TENTATIVE ORDER

implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters)." Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Therefore, acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "*Guidance for NPDES Permit Issuance*," dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Consistent with Order R5-2012-0085, effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay	70%
Median for any three consecutive bioassays	90%

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) Table F-17, below, includes chronic WET data for testing performed by the Discharger from September 2014 through June 2017. This data was used to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

Table F-17. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow *Pimephales promelas*		Water Flea *Ceriodaphnia dubia*		Green Algae *Selenastrum capricornutum*
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
17 May 2016	1	1	1	1	1

i. **RPA.** No dilution has been granted for chronic WET. Chronic toxicity testing results exceeding 1.3 chronic toxicity units (TUc) (as 100/NOEC) and a percent effect at 100 percent effluent exceeding 25 percent demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Based on chronic toxicity testing conducted between September 2014 and June 2017, the maximum chronic toxicity result was 1 TUc on 17 May 2016 with a percent effect of

13.57 percent. Therefore, the discharge does not have reasonable potential to cause or contribute to an in-stream exceedance of the Basin Plan's narrative toxicity objective.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CF.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations have been established in this Order for ammonia because it is an oxygen-demanding substance. Except for ammonia, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

Mass-based effluent limitations were calculated based upon the design flow (average dry weather flow) in Prohibition III.G of this Order.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45(d) requires AMEL's and AWEL's for POTW's unless impracticable. For copper, dichlorobromomethane, and zinc, AWEL's have been replaced with MDEL's in accordance with section 1.4 of the SIP. Furthermore, for pH, chlorine residual, and total coliform organisms, AWEL's have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less-stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. section 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for ammonia, BOD_5, copper, dichlorobromomethane, nitrate plus nitrite, settleable solids, TSS, and zinc. The effluent limitations for these pollutants are less stringent than those in Order R5-2012-0085. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA sections 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent WQBEL's "*except in compliance with section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

TENTATIVE ORDER

i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLA's will assure the attainment of such water quality standards.

ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

The Sacramento River is considered an attainment water for ammonia, BOD_5, copper, dichlorobromomethane, nitrate plus nitrite, settleable solids, TSS, and zinc because the receiving water is not listed as impaired on the 303(d) list for these constituents.[1] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of the effluent limitations for ammonia, copper, dichlorobromomethane, and zinc, removal of the effluent limitations for nitrate plus nitrite and settleable solids, and removal of the maximum daily and mass-based effluent limitations for BOD_5 and TSS from Order R5-2012-0085 meet the exception in CWA section 303(d)(4)(B).

b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA section 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less-stringent effluent limitation for a pollutant if information is available that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and that would have justified the application of a less-stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3 of this Fact Sheet, updated information that was not available at the time Order R5-2012-0085 was issued indicates that nitrate plus nitrite and settleable solids in the effluent do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2012-0085 was issued indicates that less-stringent effluent limitations for ammonia, copper, dichlorobromomethane, and zinc based on Facility performance and available dilution credits satisfy the requirements in CWA section 402(o)(2). The updated information that supports the removal of effluent limitations for these constituents includes the following:

i. **Ammonia.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Sacramento River has sufficient dilution and assimilative capacity available for ammonia. Therefore, this Order includes less stringent effluent limitations for ammonia based on updated Facility performance and available dilution.

ii. **Copper.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Sacramento River has sufficient dilution and assimilative capacity available for copper. Therefore, this Order includes less stringent effluent limitations for copper based on updated Facility performance and available dilution.

iii. **Dichlorobromomethane.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent

[1] "The exceptions in section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

limitations, and the Sacramento River has sufficient dilution and assimilative capacity available for dichlorobromomethane. Therefore, this Order includes less stringent effluent limitations for dichlorobromomethane based on updated Facility performance and available dilution.

iv. **Nitrate plus Nitrite.** Effluent monitoring data collected during the discharge season from September 2014 through June 2017 indicates that nitrate plus nitrite in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL objective.

v. **Settleable Solids.** Effluent monitoring data collected during the discharge season from September 2014 through June 2017 indicates that settleable solids in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan objective.

vi. **Zinc.** Updated effluent data indicates that the Facility cannot consistently comply with the existing performance-based effluent limitations, and the Sacramento River has sufficient dilution and assimilative capacity available for zinc. Therefore, this Order includes less stringent effluent limitations for zinc based on updated Facility performance and available dilution.

c. **Flow**. Order R5-2012-0085 included flow as an effluent limit based on the Facility design flow. In accordance with Order R5-2012-0085, compliance with the flow limit was calculated using the average daily flow over three consecutive dry weather months. Flow is not a pollutant and therefore has been changed from an effluent limit to a discharge prohibition in this Order, which is an equivalent level of regulation. This Order is not less stringent because compliance with flow as a discharge prohibition will be calculated the same way as the previous Order. Flow as a discharge prohibition adequately regulates the Facility, does not allow for an increase in the discharge of pollutants, and does not constitute backsliding.

4. Antidegradation Policies

Surface Water. The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. This Order provides for an increase in the volume and mass of pollutants discharged for ammonia, copper, dichlorobromomethane, and zinc. The increase will not have a significant impact on beneficial uses and will not cause a violation of water quality objectives. Compliance with these requirements will result in the use of BPTC of the discharge. The impact on existing water quality will be insignificant.

This Order relaxes the effluent limitations for ammonia, copper, dichlorobromomethane, and zinc based on the allowance of mixing zones in accordance with the Basin Plan, the SIP, U.S. EPA's *Water Quality Standards Handbook, 2nd Edition* (updated July 2007), and the TSD. As discussed in section IV.C.2.c of this Fact Sheet, the mixing zones comply with all applicable requirements and will not be adverse to the purpose of the state and federal antidegradation policies. Furthermore, the allowance of mixing zones for ammonia, copper, and zinc will result in a minor increase in the discharge, resulting in less than 10 percent of the available assimilative capacity in the receiving water. According to U.S. EPA's memorandum on Tier 2 Antidegradation Reviews and Significance Thresholds, any individual decision to lower water quality for non-bioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with

the objectives and goals of the Clean Water Act. The Central Valley Water Board finds that any lowering of water quality outside the mixing zone for ammonia, copper, and zinc will be de minimis. Further, any change to water quality will not unreasonably affect present and anticipated beneficial uses and will not result in water quality less than prescribed in State Water Board policies or the Basin Plan. The measures implemented required by this Order result in the implementation of BPTC. Thus, the relaxation of the effluent limitations for ammonia, copper, and zinc, is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

The allowance of a mixing zone for dichlorobromomethane will result in the use of greater than 10 percent of the available assimilative capacity in the receiving water. The Discharger submitted an Antidegradation Analysis Update Study (2017 Antidegradation Update) with the ROWD in order to justify the increased discharge of dichlorobromomethane.

The 2017 Antidegradation Update assessed whether the resultant conditions of the mixing zone will continue to be protective of the beneficial uses of the Sacramento River and whether allowing the potential incremental degradation would be consistent with the maximum benefit of the people of the state, given the economic and social benefits versus the water quality impacts and the cost and feasibility of alternatives.

The 2017 Antidegradation Update provides a "simple" antidegradation analysis following the guidance in Administrative Procedures Update (APU) 90-004 based on the determination that the discharge is temporally limited, will not result in any long-term deleterious effects on water quality, and the reduction in water quality is spatially localized. Pursuant to APU 90-004, the 2017 Antidegradation Update evaluated whether changes in water quality resulting from the discharge are consistent with the maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not cause water quality to be less than water quality objectives. Findings from the 2017 Antidegradation Update are summarized below.

i. **Water quality parameters and beneficial uses that will be affected by this Order and the extent of the impact.** Compliance with this Order will not adversely impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. 40 C.F.R. section 131.12 defines the following tier designations to describe water quality in the receiving water body.

Tier 1 Designation: Existing in-stream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. (40 C.F.R. § 131.12)

Tier 2 Designation: Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all

new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control. (40 C.F.R. § 131.12)

The tier designation is assigned on a pollutant-by-pollutant basis. The 2017 Antidegradation Update did not delineate the tier designation for dichlorobromomethane, but instead assessed the potential lowering of the Sacramento River water quality. The Sacramento River from Box Canyon to Shasta Lake is not listed as an impaired water body on the 2014 and 2016 303(d) list; therefore, the Sacramento River is not impaired by dichlorobromomethane and is considered a Tier 2 receiving water for this pollutant.

As discussed below, the 2017 Antidegradation Update evaluated whether the allowance of an increase in dichlorobromomethane concentrations and loadings in this Order will result in the BPTC of the discharge necessary to assure a pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit of the people of the state will be maintained.

ii. **Scientific Rationale for Determining Potential Lowering of Water Quality.** The rationale used in the 2017 Antidegradation Update is based on 40 C.F.R. section 131.12, the State Antidegradation Policy, and State Water Board APU 90-004. Pursuant to APU 90-004, the 2017 Antidegradation Update provided a "simple" analysis and evaluated whether the proposed discharge will produce significant changes in water quality of the receiving water that would adversely impact beneficial uses. The relevant water quality standards are concentration-based in order to prevent exceedances of concentration-based exposure thresholds. Critical flows and representative water quality measurements are criteria-dependent (i.e., shorter representative averaging periods for acute effects as compare to long-term human health criteria).

iii. **Alternative Control Measures.** As part of the 2017 Antidegradation Update, several alternatives were considered that would reduce or eliminate the lowering of water quality associated with the granting of the proposed dilution credits. The treatment alternatives were evaluated based on water quality, economic, implementation feasibility, and social factors. The treatment alternatives that were considered include the following:

(a) Higher level of treatment;

(b) Zero discharge;

(c) Flow-restricted discharge;

(d) Pollutant source minimization;

(e) Connect to a nearby wastewater stream; and

(f) Change in drinking water source.

iv. **Socioeconomic Evaluation.** As part of the 2017 Antidegradation Update, the Discharger performed a socioeconomic evaluation and considered alternatives to the potential water quality impacts. The objective of the socioeconomic analysis was to determine if the lowering of Sacramento River water quality is in the maximum benefit of the people of the state. The socioeconomic evaluation provides an in-depth analysis of 1) the social benefits and costs based on the ability to accommodate socioeconomic development in the City of

Dunsmuir, 2) the magnitude of the water quality impacts, the change in water quality from existing conditions, and expected effects on beneficial uses of the Sacramento River and downstream waters, 3) the feasibility and effectiveness of reducing the lowering of water quality by implementing alternatives, and 4) the economic costs of alternatives: assessed against the current cost of allowing for dilution credits, the increased cost for ratepayers, and the magnitude of the change in ratepayer costs.

Given the current infrastructure in place, existing and future development in the City of Dunsmuir would rely on the Facility for wastewater collection, treatment, and ultimate disposal. The proposed dilution credits would not further destabilize the local economy or hinder growth. Not allowing the dilution credits, however, would have negative socioeconomic effects on the area. Should the incremental changes in the Sacramento River water quality be disallowed, such action would 1) force future developments to find alternative methods for disposing of wastewater; 2) require addition of costly plant expansions/upgrades for which the current budget does not allow and existing residents cannot afford; and 3) prohibit development within and adjacent to the Facility's service area.

As described in section IV.D.4.i, above, discharge of constituents for which dilution credits are being requested would have little to no impact on pollutant concentrations in the downstream receiving water. Additionally, planned Facility upgrades that are currently in the planning stages will allow for more consistent compliance with applicable effluent limitations.

An evaluation of several alternatives and their effects on water quality impacts and beneficial use protection did not identify any feasible alternative control measures that would more effectively accommodate the dilution credits that would result from implementing the alternative, relative to implementing the proposed dilution credits. For example, providing a higher level of treatment is the most effective alternative to prevent lowering of water quality in the Sacramento River, however, it is not as economically feasible to implement. Also, even though the Discharger is planning to complete multiple Facility upgrades, dilution credits are still necessary to provide a means of compliant sewer capacity.

In general, the cost to implement alternatives would be distributed to ratepayers based on the need to address existing water quality issues. Development that requires plant expansion would incur costs associated with additional treatment, thereby possibly prohibiting some of the socioeconomic growth within the area. Furthermore, existing residents would be forced to bear the costs associated with additional treatment and/or land disposal facilities. Not allowing for dilution credits would require additional rate increases, thereby putting a significant burden on the people of a community already disadvantaged compared to the rest of the state.

v. **Justification of Socioeconomic Considerations.** The Discharger will continue to operate a treatment system that meets and exceeds BPTC by filtering the secondary effluent and improving effluent quality via the proposed project. Any potential for discharges to cause additional exceedances of adopted water quality criteria/objectives would be effectively addressed through the NPDES permit renewal process, thereby being addressed in a timely manner. Thus, resulting downstream water quality within the

Sacramento River would not cause a nuisance and would continue to be protective of all beneficial uses within the river, as well as uses of downstream water.

The alternatives considered within the 2017 Antidegradation Update were found to be infeasible for either cost or logistical concerns when compared to the proposed action of allowing for the proposed dilution credits. Not allowing for the dilution credits would have direct adverse socioeconomic effects with regard to the local economy and limited growth in the region, which, in turn, would adversely affect the future tax base of the community.

The 2017 Antidegradation Analysis concludes that the Facility currently operates, and will continue to operate, to meet the highest statutory and regulatory requirements, which result in the BPTC of the discharge necessary to assure that a water quality nuisance will not occur in the receiving water and beneficial uses are fully protected. The limited degradation in receiving water quality resulting from the allowance of the proposed dilution credits would accommodate important socioeconomic stability and development in the service area while maintaining full protection of the beneficial uses of the Sacramento River.

The Central Valley Water Board concurs with the findings of the 2017 Antidegradation Update and finds that the discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy. Compliance with these requirements will result in the BPTC of discharges from the Facility. The impact on existing water quality will be insignificant.

This Order removes effluent limitations for nitrate plus nitrite and settleable solids based on updated information, as described further in sections IV.C.3 and IV.D.3 of this Fact Sheet. The removal of effluent limitations for nitrate plus nitrite and settleable solids will not result in a decrease in the level of treatment or control, or a reduction in water quality. Therefore, the Central Valley Water Board finds that the removal of the effluent limitations for nitrate plus nitrite and settleable solids does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and the State Antidegradation Policy.

This Order also removes MDEL's and mass-based effluent limitations for BOD_5 and TSS based on 40 C.F.R part 122.45(d) and (f), and as described further in section IV.D.3 of this Fact Sheet. The removal of MDEL's and mass-based effluent limits for BOD_5 and TSS will not result in a decrease in the level of treatment or control, or a reduction in water quality because the WQBEL's for BOD_5 and TSS are based on the technical capability of the treatment process to meet Title 22, or equivalent, disinfection requirements required to protect the beneficial uses of the receiving waters. This is unchanged from the previous permit. Furthermore, both concentration-based AMEL's and AWEL's remain for BOD_5 and TSS, as well as an average dry weather discharge flow prohibition that limits the amount of flow that can be discharged daily. The combination of concentration-based effluent limits and a flow prohibition in this Order are equivalent to mass-based effluent limitations, which were redundant limits contained in previous Orders by multiplying the concentration-based effluent limits and permitted average dry weather flow by a conversion factor to

determine the mass-based effluent limitations. Therefore, the Central Valley Water Board finds that the removal of MDEL's and mass-based effluent limits for BOD_5 and TSS does not result in an allowed increase in pollutants or any additional degradation of the receiving waters. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Antidegradation Policy.

d. **Groundwater.** The Discharger utilizes network of five percolation ponds. Domestic wastewater contains constituents such as BOD_5, electrical conductivity, metals, nitrate, organics, pathogens, and total dissolved solids. Percolation from the ponds may result in an increase in the concentration of these constituents in the groundwater. The increase in the concentration of these constituents in the groundwater must be consistent with the State Antidegradation Policy. Any increase in pollutant concentrations in the groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing and economic expansion in the area and must be consistent with the maximum benefit of the people of the state. Some degradation of groundwater by the Discharger is consistent with the State Antidegradation Policy provided that:

i. The degradation is limited in extent;

ii. The degradation after effective source control, treatment, and control is limited to waste constituent typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;

iii. The Discharger minimizes degradation by fully implementing, regularly maintaining, and optimally operating BPTC measures; and

iv. The degradation does not result in water quality less than that prescribed in the Basin Plan.

Groundwater limitations for total coliform organisms and nitrate nitrogen (as N) have been included in this Order for the protection of the MUN beneficial use of the groundwater.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, pH, and TSS. Restrictions on these constituents are discussed in section IV.B.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. For BOD_5, pH, and TSS, both technology-based effluent limitations and WQBEL's are applicable. The more stringent of these effluent limitations are implemented by this Order. These limitations are not more stringent than required by the CWA.

WQBEL's have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL's were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual WQBEL's for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations

Discharge Point 001

Table F-18. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	--	--	--	TTC
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.0	BP
Total Suspended Solids	mg/L	10	15	--	--	--	TTC
	% Removal	85	--	--	--	--	CFR
Priority Pollutants							
Copper, Total Recoverable	µg/L	29	--	54	--	--	CTR
Dichlorobromomethane	µg/L	25	--	72	--	--	CTR
Zinc, Total Recoverable	µg/L	81	--	140	--	--	CTR
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	22	45	--	--	--	NAWQC
	lbs/day[2]	55	110	--	--	--	
Chlorine, Total Residual	mg/L	--	0.011[3]	0.019[4]	--	--	NAWQC
Total Coliform Organisms	MPN/100 mL[5]	--	23[6]	240[7]	--	--	DDW
Total Coliform Organisms	MPN/100 mL[8]	--	2.2[6]	23[7]	--	240	Title 22
Acute Toxicity	% survival	--	--	70[9]/90[10]	--	--	BP

1 TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 C.F.R part 133.
BP – Based on water quality objectives contained in the Basin Plan.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on U.S. EPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
MCL – Based on the Primary Maximum Contaminant Level.
DDW – Pursuant to guidance from DDW.
Title 22 – Based on CA Division of Drinking Water Reclamation Criteria, CCR, division 4, chapter 3.

2 Based on an average dry weather flow of 0.30 MGD.

3 Applied as a 4-day average effluent limitation.

4 Applied as a 1-hour average effluent limitation.

5 Applicable for discharges from 16 November through 30 April.

6 Applied as a 7-day median effluent limitation.

7 Not to be exceeded more than once in any 30-day period.

8 Applicable for discharges from 1 May through 14 June and 16 September through 15 November.

9 70% minimum of any one bioassay.

10 90% median for any three consecutive bioassays.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications

1. The Land Discharge Specifications are necessary to protect the beneficial uses of the groundwater.

2. Anaerobic (lacking in oxygen) processes tend to produce aesthetically undesirable odors. To minimize the production of undesirable odors, the Discharger is required to maintain some (at least 1.0 mg/L) dissolved oxygen in the upper one foot of the pond.

3. **Daily Average Discharge Specification.** The discharge specification is based on the percolation pond average dry weather flow capacity of 0.30 MGD.

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria, where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are MUN, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated with the MUN beneficial use. These include, at a minimum, compliance with MCL's in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 mL. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The

Discharger must comply with all Standard Provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.

b. **Whole Effluent Toxicity (WET).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a site-specific Toxicity Reduction Evaluation (TRE) or, under certain circumstances, the Discharger may be allowed to participate in an approved Toxicity Evaluation Study (TES) in lieu of conducting a site-specific TRE. This Order may be reopened to include a new chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE and/or TES.

c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

d. **Drinking Water Policy.** On 26 July 2013, the Central Valley Water Board adopted Resolution R5-2013-0098, amending the Basin Plan and establishing a Drinking Water Policy. The State Water Board approved the Drinking Water Policy on 3 December 2013. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

e. **Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).** On 31 May 2018, as part of the CV-SALTS initiative, the Central Valley Water Board approved Basin Plan Amendments to incorporate new strategies for addressing ongoing salt and nitrate accumulation in the Central Valley. If approved by the State Water Board, the Office of Administrative Law, and U.S. EPA, the Amendments would impose certain new requirements on salt and nitrate discharges. If the Amendments ultimately go into effect, this Order may be amended or modified to incorporate any newly-applicable requirements.

2. Special Studies and Additional Monitoring Requirements

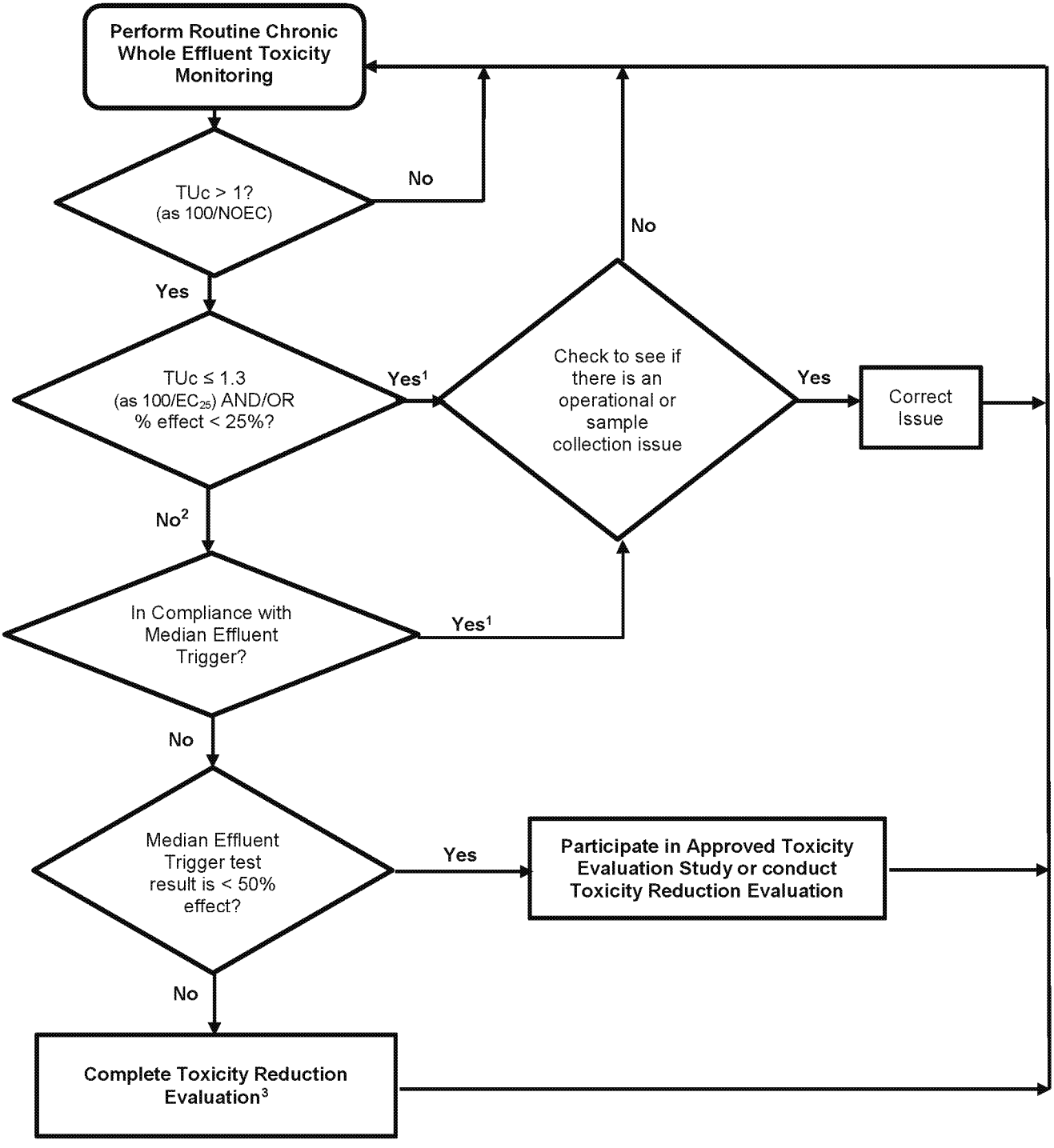
a. **Chronic Whole Effluent Toxicity (WET) Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.00) Based on whole effluent chronic toxicity testing performed by the Discharger from September 2014 through June 2017, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The MRP of this Order requires chronic WET monitoring for demonstration of compliance with the Basin Plan's narrative toxicity objective. If the discharge exceeds the chronic toxicity monitoring trigger, this provision requires the Discharger either participate in an approved TES or conduct a site-specific TRE.

A TES may be conducted in lieu of a TRE if the percent effect at 100 percent effluent is less than or equal to 50 percent. Determining the cause of toxicity can be challenging when the toxicity signal is low. Several Central Valley facilities with similar treatment systems have been experiencing intermittent low-level toxicity. The dischargers have not been successful identifying the cause of the toxicity because of the low toxicity signal and the intermittent nature of the toxicity. Due to these challenges, CVCWA, in collaboration with staff from the Central Valley Water Board, has initiated a Special Study to Investigate Low Level Toxicity Indications (Group Toxicity Study). This Order allows the Discharger to participate in an approved TES, which may be conducted individually or as part of a coordinated group effort with other similar dischargers that are exhibiting toxicity. Although the current CVCWA Group Toxicity Study is related to low-level toxicity, participation in an approved TES is not limited to only low-level toxicity issues.

See the WET Monitoring Flow Chart (Figure F-2), below, for further clarification of the decision points for determining the need for TES/TRE initiation.

Figure F-2
WET Accelerated Monitoring Flow Chart



[1] The Discharger shall participate in an approved TES if the discharge has exceeded the chronic toxicity monitoring trigger twice or more in the past 12-month period and the cause is not identified and/or addressed.

[2] The Discharger may elect to take additional samples to determine the 3-sample median. The samples shall be collected at least one week apart and the final sample shall be within 6 weeks of the initial sample exhibiting toxicity.

[3] The Discharger may participate in an approved TES instead of a TRE if the Discharger has conducted a TRE within the past 12 months and has been unsuccessful in identifying the toxicant.

3. **Best Management Practices and Pollution Prevention**

   a. **Salinity Evaluation and Minimization Plan.** An evaluation and minimization plan for salinity is required to be maintained in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Sacramento River.

4. **Construction, Operation, and Maintenance Specifications**

   a. **Percolation Pond Operating Requirements**

      i. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

      ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

      iii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

         (a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface;

         (b) Weeds shall be minimized; and

         (c) Dead algae, vegetation, and debris shall not accumulate on the water surface.

      iv. Freeboard shall never be less than 2 feet (measured vertically to the lowest point of overflow).

      v. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary I&I during the non-irrigation season.

      vi. Prior to the onset of the rainy season of each year, available pond storage capacity shall at least equal the volume necessary to comply with the Land Discharge Specifications in section IV.B of the Order.

5. **Special Provisions for Publicly-Owned Treatment Works (POTW's)**

   a. **Sludge/Biosolids Treatment or Discharge Specifications.** Sludge in this Order means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the Facility. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 C.F.R. part 503. This Order does not regulate off-site use or disposal of biosolids, which are regulated instead under 40 C.F.R. part 503; administered by U.S. EPA. The Sludge/Biosolids Treatment or Discharge Specifications in this Order implement the California Water Code to ensure sludge/biosolids are properly handled on-site to prevent nuisance, protect public health, and protect groundwater quality.

   b. **Collection System.** The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The State Water Board amended the MRP for the General Order through Order WQ 2013-0058-EXEC on 6 August 2013. The General

Order requires public agencies that own or operate sanitary sewer systems with greater than 1 mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMP's) and report all sanitary sewer overflows (SSO's), among other requirements and prohibitions.

The General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive, and therefore, more stringent than the requirements under federal standard provisions. The Discharger and public agencies that are discharging wastewater into the Facility's collection system were required to obtain enrollment for regulation under the General Order by 1 December 2006.

c. **Continuous Monitoring Systems.** This Order, and the MRP that is a part of this Order, require that certain parameters be monitored on a continuous basis. The Facility is not staffed 24 hours a day. Permit violations or system upsets can go undetected during this period. The Discharger has a system in place to automatically contact Facility operators in the event alarms are generated at the Facility. The Discharger is required to establish an electronic system for operator notification based on continuous recording device alarms. For any future Facility upgrades, the Discharger shall upgrade the continuous monitoring and notification system simultaneously.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP, Attachment E of this Order, establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for flow (continuous), BOD_5 (weekly), and TSS (weekly) have been retained from Order R5-2012-0085.

2. Order R5-2012-0085 required weekly influent mass calculations for BOD_5 and TSS. The Central Valley Water Board has determined that influent mass calculations for BOD_5 and TSS are not necessary to determine compliance with conditions established in this Order. Thus, influent mass calculation requirements for BOD_5 and TSS have not been retained from Order R5-2012-0085.

3. Order R5-2012-0085 required daily influent monitoring for pH. This Order reduces the monitoring frequency for pH from daily to three times per week. The Central Valley Water Board finds that this frequency is sufficient for characterizing the wastewater and assessing compliance with effluent limitations established in this Order.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2), effluent monitoring is required for all constituents with effluent limitations or discharge prohibitions. Effluent monitoring is necessary to assess compliance with effluent limitations and discharge prohibitions, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types for flow (continuous), BOD_5 (weekly), TSS (weekly), copper (monthly), dichlorobromomethane (monthly), zinc (monthly), alkalinity (monthly), chlorine residual (continuous), electrical conductivity (monthly), hardness (monthly), standard minerals (annually), temperature (twice per month), total coliform organisms (weekly), total dissolved solids (annually) and turbidity (twice per month) have been retained from Order R5-2012-0085 to determine compliance with effluent limitations and discharge prohibitions for these parameters.

3. Order R5-2012-0085 required weekly effluent mass calculations for BOD_5 and TSS. The Central Valley Water Board has determined that effluent mass calculations for BOD_5 and TSS are not necessary to determine compliance with conditions established in this Order. Thus, effluent mass calculation requirements for BOD_5 and TSS have not been retained from Order R5-2012-0085

4. Monitoring data collected over the previous permit term for arsenic, carbon tetrachloride, heptachlor, chloride, nitrate, nitrite, settleable solids, and sulfate did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2012-0085.

5. Order R5-2012-0085 required daily effluent monitoring for pH. This Order reduces the monitoring frequency for pH from daily to three times per week. The Central Valley Water Board finds that this frequency is sufficient for characterizing the wastewater and assessing compliance with effluent limitations established in this Order.

6. Order R5-2012-0085 required monthly effluent monitoring for ammonia. This Order increases the monitoring frequency for ammonia from monthly to twice per month. Additionally, this Order requires mass calculations for ammonia to determine compliance with mass-based effluent limitations for this oxygen-demanding substance. The Central Valley Water Board finds that these monitoring requirements are sufficient for characterizing the wastewater and assessing compliance with effluent limitations established in this Order.

7. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern semi-annually during the year 2021. This monitoring frequency has been retained from Order R5-2012-0085. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

8. Water Code section 13176, subdivision (a), states: "*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with section 100825) of chapter 4 of part 1 of division 101 of the Health and Safety Code.*" DDW accredits laboratories through its Environmental Laboratory Accreditation Program (ELAP).

   Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA (Wat. Code §§ 13370,

subd. (c), 13372, 13377). Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements (Wat. Code § 13372, subd. (a)). The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature (40 C.F.R. § 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity (WET) Testing Requirements

1. **Acute Toxicity.** Consistent with Order R5-2012-0085, semi-annual 96-hour bioassay testing is required, when discharging to surface water, to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Order R5-2012-0085 required annual chronic WET testing between 16 September and 15 October. This Order requires annual chronic WET testing within 30 days of commencing discharges to surface waters. The Central Valley Water Board finds that these chronic WET testing requirements are sufficient for characterizing the wastewater and assessing compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

b. Receiving water monitoring frequencies and sample types for flow (daily), pH (weekly), copper (semi-annually), dichlorobromomethane (semi-annually), zinc (semi-annually), ammonia (annually), dissolved oxygen (weekly), electrical conductivity (weekly), hardness (monthly), standard minerals (annually), temperature (weekly), total coliform organisms (semi-annually), total dissolved solids (annually), and turbidity (semi-annually) at Monitoring Locations RSW-001 and RSW-002 have been retained from Order R5-2012-0085 to characterize the receiving water for these parameters.

c. Monitoring data collected over the previous permit term for arsenic, carbon tetrachloride, heptachlor, nitrate, nitrite, and sulfate, did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific receiving water monitoring requirements for these parameters have not been retained from Order R5-2012-0085.

d. In accordance with section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires upstream receiving water monitoring for priority pollutants and other pollutants of concern at Monitoring Location RSW-001 semi-annually during the year 2021, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. See section IX.D of the MRP (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater

a. Water Code section 13267 states, in part, "(a) A *Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region" and "(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges…*

TENTATIVE ORDER

waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports." The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, a Regional Water Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The MRP is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the MRP are necessary to assure compliance with these WDR's. The Discharger is responsible for the discharges of waste at the Facility subject to this Order.

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents that may have migrated to groundwater, and an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide BPTC to comply with the State Antidegradation Policy. Economic analysis is only one of many factors considered in determining BPTC. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with the State Antidegradation Policy and the Basin Plan.

c. Order R5-2012-0085 required regular monitoring of groundwater wells RGW-001 through RGW-010. This Order removes the monitoring of groundwater wells RGW-002 and RGW-008 because Facility upgrades have rendered these wells inoperable. This Order requires the Discharger to continue groundwater monitoring of wells RGW-004, RGW-005, RGW-006, and RGW-010, and retains the regular schedule of groundwater monitoring in the attached MRP. This Order retains measurement of depth to groundwater and discontinues all other regular groundwater monitoring parameters for wells RGW-001, RGW-003, RGW-007, and RGW-009, because monitoring of these wells for the full list of parameters is not necessary to determine whether the Facility is impacting groundwater. The groundwater monitoring reports are necessary to evaluate impacts to waters of the state to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including the State Antidegradation Policy. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

E. Other Monitoring Requirements

1. Biosolids Monitoring

Biosolids monitoring for compliance with 40 C.F.R. part 503 regulations is not included in this Order since it is a program administered by U.S. EPA's part 503 biosolids program:

https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws

2. Water Supply Monitoring

a. Water supply monitoring is required to evaluate the source of constituents in the wastewater. Consistent with Order R5-2012-0085, this Order requires annual water supply monitoring for electrical conductivity, standard minerals, and total dissolved solids at Monitoring Location SPL-001.

b. Order R5-2012-0085 required annual water supply monitoring for copper and zinc. The Central Valley Water Board finds that water supply monitoring for copper and zinc is not necessary; thus, water supply monitoring requirements for these parameters have not been retained from Order R5-2012-0085.

3. Percolation Pond Monitoring

a. Percolation pond monitoring is required to ensure proper operation of the storage ponds. Monitoring frequencies for freeboard (daily), dissolved oxygen (weekly), levee condition (weekly), color (weekly), and odor (weekly) have been retained from Order R5-2012-0085.

4. Land Discharge Monitoring

a. Land discharge monitoring is required to ensure that the discharge to the percolation ponds complies with the land discharge specifications in section IV.B of this Order. Monitoring frequencies and sample types for flow (continuous), BOD_5 (weekly), TSS (weekly), chloride (annually), iron (annually), manganese (annually), electrical conductivity (monthly), hardness (monthly), nitrate (monthly), total coliform organisms (weekly), and total dissolved solids (annually) have been retained from Order R5-2012-0085.

b. Monitoring data collected over the previous permit term for settleable solids and sulfate did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, land discharge monitoring requirements for settleable solids and sulfate have not been retained from Order R5-2012-0085.

5. French Drain and Subsurface Drain Monitoring

a. Order R5-2012-0085 required monthly monitoring for total coliform organisms and fecal coliform organisms within the French Drain and Subsurface Drain at Monitoring Locations FD-001 and SD-001, respectively. Within the ROWD, the Discharger requested that specific monitoring requirements at Monitoring Locations FD-001 and SD-001 not be retained from Order R5-2012-0085, since the French Drain and Subsurface Drain are subject to off-site sources of contamination and are not representative of wastewater from the Facility. Thus, specific monitoring requirements for fecal coliform organisms and total coliform organisms at Monitoring Locations FD-001 and SD-001 have not been retained from Order R5-2012-0085.

6. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study

Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S. EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from their own laboratories or their contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall submit annually the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the City of Dunsmuir, Wastewater Treatment Plant. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Persons

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following **<Describe Notification Process (e.g., newspaper name and date)>**

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:

http://www.waterboards.ca.gov/centralvalley/board_info/meetings/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on **<Date>**.

C. Public Hearing

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date:	**6/7 December 2018**
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

Interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

TENTATIVE ORDER

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water board to review the action in accordance with Water Code section 13320 and CCR, Title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the 30th day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

Or by email at waterqualitypetitions@waterboards.ca.gov

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The ROWD, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR's and NPDES permit should contact the Central Valley Water Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to David Kirn at (916) 464-4761.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	28.2	<0.010	5.62	5.62[1]	3.18[2]	--	--	--	--	Yes
Bis (2-ethylhexyl) phthalate	µg/L	<1.0	<1.1	1.8	--	--	1.8	5.9	--	6.0	No[3]
Chloride	mg/L	71.2	1.23	230	860[1]	230[4]	--	--	--	250	No
Copper, Total Recoverable	µg/L	20.6	1.1	4.6	6.5	4.6	1,300	--	6.4	1,000	Yes
Dichlorobromomethane	µg/L	4.56	<0.080	0.56	--	--	0.56	46	--	80	Yes
Electrical Conductivity @ 25°C	µmhos/cm	375[5]	89[5]	900	--	--	--	--	--	900	No
Nitrate, Total (as N)	mg/L	6.74	<0.020	10	--	--	--	--	--	10	No
Nitrite, Total (as N)	mg/L	0.074	<0.010	1.0	--	--	--	--	--	1.0	No
Sulfate	mg/L	18[5]	1.5[5]	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	235[5]	55[5]	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	69.8	0.80	18	60	60	--	--	18	5,000	Yes

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level

Footnotes:
(1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
(2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day average.
(3) See section IV.C.3 of the Fact Sheet for a discussion of the RPA results.
(4) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
(5) Represents the maximum observed annual average concentration for comparison with the MCL.

TENTATIVE ORDER

ATTACHMENT H – CALCULATION OF WQBEL'S

Human Health WQBEL's Calculations										
Parameter	Units	Criteria	Mean Background Concentration	CV Eff[1]	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Dichlorobromomethane	µg/L	0.56	<0.080	1.64	49.9	2.95	2.52	25	72	--

[1] Coefficient of Variation (CV) was established in accordance with section 1.4 of the SIP.

Aquatic Life WQBEL's Calculations																
Parameter	Units	Criteria		B	Dilution Factors		Aquatic Life Calculations							Final Effluent Limitations		
		CMC	CCC		CMC	CCC	ECA Multiplier$_{acute}$	LTA$_{acute}$	ECA Multiplier$_{chronic}$	LTA$_{chronic}$	AMEL Multiplier$_{95}$	AWEL Multiplier	MDEL Multiplier$_{99}$	AMEL[2]	AWEL[3]	MDEL[4]
Ammonia Nitrogen, Total (as N)	mg/L	5.62	3.18	<0.010	9	14	0.20	11	0.67	32[5]	1.95[5]	3.91	--	22	45	--
Copper, Total Recoverable	µg/L	6.4[6]	4.6	1.1	9	14	0.36	19	0.56	30	1.48	--	2.82	29	--	54
Zinc, Total Recoverable	µg/L	60[6]	60	1.2	7.4	0.57	0.41	58	0.62	58	1.40	--	2.43	81	--	140

[1] CV was established in accordance with section 1.4 of the SIP.
[2] Average Monthly Effluent Limitations are calculated according to section 1.4 of the SIP using a 95th percentile occurrence probability.
[3] Average Weekly Effluent Limitations are calculated according to section 1.4 of the SIP using a 98th percentile occurrence probability.
[4] Maximum Daily Effluent Limitations are calculated according to section 1.4 of the SIP using a 99th percentile occurrence probability.
[5] The LTA and AMEL multiplier corresponding to the 30-day CCC was calculated assuming a 30-day averaging period and a monthly sampling frequency (n) of 30.
[6] CMC replaced with more stringent Basin Plan maximum concentration objective.

TENTATIVE ORDER